

We claim:

1. A process for making an oxygen-sensitive polymeric structure, comprising  
(a) adding an oxygen-sensitive indicator to a thermoplastic polymeric material heated to just above its melting temperature;

5 (b) mixing the oxygen-sensitive indicator thoroughly within the thermoplastic polymeric material while continuing the heating to maintain the thermoplastic polymeric material in a substantially liquid form; and

(c) forming the mixture into an end product form of indicator-polymer product.

10 2. The process for making an oxygen-sensitive polymeric structure of claim 1 wherein the forming step is accomplished by an extrusion process, a molding process or an injection molding process.

15 3. The process for making an oxygen-sensitive polymeric structure of claim 1 wherein the oxygen-sensitive indicator is selected from the group consisting of polycyclic aromatic hydrocarbons, pyrene, fluoranthene, decacyclene, diphenylanthracene, benzo(g,h,i)perylene), porphyrins, platinum or palladium octaethylporphyrin, tetraphenylporphyrin, tetrabenzporphyrin, chlorins, bacteriochlorins, isobacteriochlorins, chlorophyll), and combinations thereof.

20 4. The process for making an oxygen-sensitive polymeric structure of claim 1 wherein the polymeric material is selected from the group consisting of linear ethylene alpha olefin copolymers, ethyl vinyl acetate, LLDPE, VLDPE metallocene catalyzed polymers, and combinations thereof.

25 5. The process for making an oxygen-sensitive polymeric structure of claim 1 wherein the melting temperature is from about 140 °C to about 240 °C.

30 6. A multi-layered food packaging film having an ability to detect oxygen presence within a packaging, comprising an indicator polymer product film and a plurality of non-oxygen sensing polymer films bonded thereto, wherein the indicator polymer product is made by a process comprising:

(a) adding an oxygen-sensitive indicator to a thermoplastic polymeric material heated to just above its melting temperature;

35 (b) mixing the oxygen-sensitive indicator thoroughly within the thermoplastic polymeric material while continuing the heating to maintain the thermoplastic polymeric material in a substantially liquid form; and

(c) forming the mixture into an end product form of indicator-polymer product.

7. The multi-layered food packaging film of claim 6 wherein the forming step is accomplished by an extrusion process, a molding process or an injection molding process.

35 8. The multi-layered food packaging film of claim 6 wherein the oxygen-sensitive indicator is selected from the group consisting of polycyclic aromatic hydrocarbons, pyrene,

fluoranthene, decacyclene, diphenylanthracene, benzo(g,h,i)perylene), porphyrins, platinum or palladium octaethylporphyrin, tetraphenylporphyrin, tetrabenzporphyrin, chlorins, bacteriochlorins, isobacteriochlorins, chlorophyll), and combinations thereof.

5 9. The multi-layered food packaging film of claim 6 wherein the polymeric material is selected from the group consisting of linear ethylene alpha olefin copolymers, ethyl vinyl acetate, LLDPE, VLDPE metallocene catalyzed polymers, and combinations thereof.

10. The multi-layered food packaging film of claim 6 wherein the melting temperature is from about 140 °C to about 240 °C.

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